DOCUMENT RESUME

ED 464 923 TM 033 853

AUTHOR Suri, Harsh
TITLE Essential Features of Methodologically Inclusive Research Syntheses.
PUB DATE 2002-04-00
NOTE 10p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 1-5, 2002).
PUB TYPE Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Educational Research; Meta Analysis; Models; *Research Methodology; *Synthesis

ABSTRACT

Contemporary educational research is marked by diversity, complexity, and richness of purposes, methods, and perspectives. A framework, the Methodologically Inclusive Research Synthesis (MIRS), has been developed to offer a set of guidelines to facilitate informed choices at the critical decision points of any research synthesis process. The MIRS perspective has been developed on the premise/observation that methods of primary research and research synthesis hold a reflexive relationship. A dialectic tension exists between the methods of primary research and research synthesis where methodological developments at either level influence methodological developments at the other level. This tension is illustrated in the award-winning article "A Critical Analysis of the Research on Learning To Teach: Making the Case for an Ecological Perspective on Inquiry" (M. Wideen, J. Mayer-Smith, and B. Moon) which appeared in "Review of Educational Research" volume 68, number 2. This paper describes the essence of the MIRS framework by drawing illustrations from this article. (Contains 14 references.) (SLD)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 464 923

Essential Features of Methodologically Inclusive Research Syntheses

Harsh Suri

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

H. Suri

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

TM033853

This paper is prepared for the:
Annual Meeting of the American Educational Research Association in New Orleans, LA
April 2002

BEST COPY AVAILABLE

Essential Features of Methodologically Inclusive Research Syntheses

Harsh Suri, The University of Melbourne
Email: H.Suri@latrobe.edu.au

(Paper presented as a part of the symposium, *Primary Research, Secondary Research and Research Synthesis – Theory, Value and Linkage,* at the Annual Meeting of the American Educational Research Association, New Orleans, April 1-5, 2002).

Since the1970s, several methods have been proposed to improve rigour in synthesising research across individual studies. Examples of some formally proposed methods of research synthesis include: "meta-analysis" (Glass, 1976), "best-evidence synthesis" (Slavin, 1986), "meta-ethnography" (Noblit & Hare, 1988), "exploratory case-study oriented review of multivocal literatures" (Ogawa & Malen, 1991), "cross-case analysis" (Miles & Huberman., 1994), aggregated analysis (Eastabrooks, Field, & Morse, 1994), "qualitative meta-synthesis" (Sandelowski, Docherty, & Emden, 1997), "meta-analysis of qualitative research" (Jensen & Allen, 1994), "interpretivist-oriented reviews" (Eisenhart, 1998) or meta-study (Paterson, Thorne, Canam, & Jillings, 2001). Each of these methods has its specific domain of applicability, strengths and weaknesses.

I commenced my doctoral project with a quest for the *most comprehensive method* of research synthesis. To pursue this quest, I immersed myself into the literature on contemporary methods of primary research and research synthesis. As I delved deeper into the literature, I realised that no single method of research synthesis can be a *best fit* for all types of research synthesis to synthesise different types and combinations of primary research for a variety of purposes. After several modifications and refinements, the current quest of my doctoral project may be encapsulated in the following question.

- Contemporary educational research is marked by diversity, complexity and richness of purposes, methods and perspectives. How can such variety and complexity be accommodated, encapsulated and celebrated at the level of synthesising educational research?

My doctoral project proposes a set of guidelines to facilitate informed decision making at critical decision points of every trustworthy research synthesis process. I refer to these guidelines collectively as a ***"Methodologically Inclusive Research Synthesis" (MIRS)*** framework or perspective. In this paper, I describe the essence of the MIRS framework. Also I demonstrate an enactment of these salient features by making references to an exemplary research synthesis. Since the 1978, the *American Educational Research Association (AERA)* has given the *Review of Research Award* in "recognition of an outstanding review of research article appearing in an AERA-sponsored publication" (http://www.aera.net/about/awards/rerpast.html). In the year 2000, the award was given to Wideen, Mayer-Smith and Moon for their article in the *Review of Educational Research (RER)* titled *A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry* (Wideen, Mayer-Smith & Moon, 1998). I illustrate the essence of the MIRS framework by drawing illustrations from this award-winning review.

 ©Harsh Suri, 2002

While developing the MIRS framework, I have been methodologically inclusive at four levels. First, I explored the possibilities of including a range of methodologically diverse primary research reports into research syntheses. Second, I explored the opportunities offered by adapting the techniques and perspectives from a variety of primary research methodologies to the process of a research synthesis. Third, I drew on ideas from several formally proposed methods of research synthesis as well as exemplary research syntheses. Fourth, I took into account varied interests of different stakeholders in educational research and practice.

Problematising the Process of Research Synthesis

Through the MIRS approach, I have attempted to problematise the entire process of a trustworthy research synthesis at a paradigmatic level. The common belief underlying different forms of formally proposed research syntheses is that evidence in educational research may be analysed and synthesised at three levels, each of which makes a worthy contribution to improve the practice of education. Within the MIRS framework, the methodological perspectives and techniques employed at each level of sense-making may be qualitative, quantitative or a combination of both. The form of research associated with each level is referred to as: primary research; secondary research; and research synthesis. My use of these terms are methodologically inclusive adaptations of Glass's (1976) definitions of the terms: primary analysis, secondary analysis and meta-analysis. I use the term meta-analysis as a broad umbrella term to refer to a variety of procedures associated with the entire process of statistical integration of primary research reports to make generalisable claims. I have refrained from re-defining the term "meta-analysis" in an inclusive sense as the term has been almost exclusively used in the past three decades to refer to "statistical analysis of the summary findings of many empirical studies" (Scope note for the term "meta-analysis" in ERIC Thesaurus).

- *Primary Analysis and Primary Research:* Primary research involves going into the field or an experimental situation to collect raw evidence to pursue one's own research question. The analysis or interpretation of this data is referred to as primary analysis and the individuals conducting such research are called primary researchers.
- *Secondary Analysis and Secondary Research:* Secondary research involves re-analysing or re-interpreting raw evidence or data collected by other primary researchers for their own primary research. This re-analysis or re-interpretation could be pursued to address the same or a different question using different analytic tools or interpretive positions.
- *Research Synthesis*: Research syntheses are different from primary research and secondary research in the sense that they analyse or interpret the analyses or interpretations reported by primary researchers rather than collecting, analysing or interpreting any raw data or evidence.

These three levels of knowledge construction are complementary: neither adversarial nor hierarchical. Primary analyses and secondary analyses constitute the evidence for research syntheses. Research syntheses, in turn, can make explicit useful connections between individual primary or secondary reports to contribute towards a more comprehensive understanding of the field. Research syntheses can strengthen the relationship between educational research, policy and practice by disseminating succinct representations of primary and secondary research. Such complementarity between the purposes of primary research and research synthesis is also reflected in the goals of synthesis by Wideen, Mayer-Smith and Moon (1998).

> First, we aim to establish what is currently known about how people learn to teach, and second, we will propose some direction for the focus and quality of future research and for the reporting of that research (p. 131).

Nonetheless the "God's eye view" that is sometimes attributed to research reviews should be contested with a call for greater transparency and accountability in the processes of research syntheses. A similar viewpoint is also expressed by Wideen, Mayer-Smith and Moon (1998).

> All researchers conduct research using a particular lens and that this focus has a bearing on what is seen, recognized as significant, and ultimately reported. This use applies to reviewers as well. Thus, we begin this review with a brief discussion of the perspectives we brought to the review and how they influenced the framing of the review and the review process (p. 131).

Reflexivity Between the Methods of Primary Research and Research Synthesis

The MIRS perspective has been developed on the premise/observation that methods of primary research and research synthesis hold a reflexive relationship. A dialectic tension exists between the methods of primary research and research synthesis where methodological developments at either level influence methodological developments at the other level.

Methodological developments at the level of primary research shape the methods of research synthesis in two ways. First, primary research reports form the data of research syntheses. Changes in methods of primary research necessitate changes in methods of research synthesis Second, research synthesists often adapt appropriate techniques of primary research to different contexts of research synthesis. For instance, meta-ethnography was conceived as ethnographic research gained popularity in educational research.

At the same time, rigour in methods of research synthesis also contributed to improving rigour in methods of primary research. For instance, meta-analysts have played an important role in raising awareness to improve rigour and reporting formats of statistical analyses in primary research reports. The MIRS approach is aimed at contributing to such collective efforts of promoting rigour by critical analyses of the current methodological trends in primary research.

Celebration of such a reflexive relationship between the methods of primary research and research synthesis is also evident in different parts of the synthesis by Wideen, Mayer-Smith and Moon (1998). Throughout their synthesis, they substantiate their choices at the critical decisions points of their synthesis by adapting the techniques and perspectives that are well established in the arena of primary research methods. Also, they provide a critical and constructive commentary on the prevalent methods employed in the relevant primary research and propose suggestions on how to improve the rigour of future research studies in a way that will enhance their utility and trustworthiness.

Methodological Inclusivity

Making a case for the concept of a meta-analysis, Glass, McGaw & Smith (1981) observed:

> Styles of research integration have been shaped by the size of the research literature. ... Integrating the research literature of the 1980s demands more sophisticated techniques of measurement and statistical analyses (p. 12). ... It is not uniformity in research reviewing and integrating that is desirable, rather it is clarity, explicitness, and openness – those properties that ... impart to inquiry its "objectivity" and trustworthiness (p. 20).

Through the MIRS approach, I extend the concept of research synthesis beyond the 1980s. In my observation, styles of research synthesis have been shaped by the *size and the styles* of the relevant primary research literature. The Table below summarises the nature of typical primary research literature published on a given topic of research juxtaposed with the methods of research synthesis that were the norm in that period. In the 1940s and 1950s, primary research on a given topic of interest tended to be a relatively small number of primary research studies employing similar methods. These could be described aptly by *adhoc* narrative reviews that were a norm in education until the 1960s. In the 1960s and 1970s, primary research on many topics of interest tended to be a large number of studies that aimed to objectively report their findings on similar hypotheses. In the 1970s and 1980s, statistical methods of integrating findings across studies gained popularity in such domains of research. These methods could synthesise studies that addressed similar hypotheses with objectivity even if the individual findings varied in magnitudes and directions. By the 1980s and 1990s, primary research in education was distinctly marked by a diversity of purposes, perspectives and methods. The elusive nature of objectivity was increasingly being recognised/questioned along with a growing acceptance of qualitative research methods. A parallel drive for methodological inclusivity can also be observed in methods of research synthesis since the late 1980s. "Clarity, explicitness, and openness" are still upheld as canons of rigour. However, there is a growing recognition that these tenets may be pursued through a variety of quantitative and/or qualitative methods of sense-making. Such diversity of approaches to research synthesis is evident from the various formally proposed approaches as well as exemplar syntheses published during the last decade in the *Review of Educational Research* and *Review of Research in Education*.

A Chronological Overview of Methodological Norms in Education

Primary Research	*Research Synthesis*
1940s & 1950s: small number of employing similar methods	Until 1960s: *adhoc* narrative reviews we norm
1960s & 1970s: large number of examining similar hypotheses	1970s & 1980s: statistical methods of re integration gained popularity
1980s & 1990s: growing eclecticisn diversity of purpose, methods and perspect	From late 1980s: growing eclecticisn diversity of purpose, methods and perspect

Contemporary primary research methods are marked by a growing acceptance of methodological diversity and eclecticism. Methodological inclusivity within the methods of research synthesis is essential to encapsulate such complexity of methods and findings typical of primary studies reported within most domains of educational research. Within the MIRS framework, methodological inclusivity is perceived as an important step to enhance the compatibility between the contemporary methods of primary research and research synthesis.

A similar need for methodological inclusivity in educational research syntheses is also expressed by Wideen, Mayer-Smith and Moon (1998).

 ©Harsh Suri, 2002

> We used a broadly based and multimethod approach to prepare this review. In doing so, we followed the lead of Soltis (1984), who argued that the study of pedagogy requires the study of its empirical, interpretive, and normative dimensions. We, too, believe that any piece of relevant, quality research can and, furthermore, should contribute to our understanding of learning to teach.

Purposefully Informed Selective Inclusivity

Methodological inclusivity can be realised in numerous valid ways. Inclusion is always mirrored by exclusion. Thus, any form of inclusivity can only be partial inclusivity. Also, a rigorous research synthesis makes much more demands on time and resources when compared with *adhoc* reviews. The practical constraints of time, resources and access to information impact upon the methodological choices we make in a research synthesis just as they do in a primary research study. Through the MIRS approach, I hope to support purposefully informed selective inclusivity at every phase of research synthesis.

A similar spirit of purposefully informed selective inclusivity is also illustrated in the review by Wideen, Mayer-Smith and Moon (1998). After describing the selection criteria and the search techniques employed their review along with the references to the previous reviews from which they have drawn heavily, they delimit the scope of their current review.

> Because a number of previously published reviews had dealt with the literature prior to 1990, we included, primarily though not exclusively, those studies published after 1990. Our selection criteria also excluded position papers and conceptual studies. We found that although there is a large body of literature on learning to teach, only a limited subset is based on primary data (p. 134).

Through the MIRS framework, I present guidelines in the form of a set of critical decision points, various options at each decision point and the pros-and-cons of each option. These guidelines are aimed at helping synthesists in being wary of common sources of biases and errors. Also, they provide a framework for the readers of research syntheses to actively evaluate and adapt the information they read to their own context. Rather than prescribing rigid standards, I hope to foster critical awareness among varied stakeholders in producing and using research syntheses.

Phases of a Research Synthesis

Meta-analysts in education frequently endorse Cooper's (1982; 1998) conceptualisation of an integrative research review as a scientific inquiry that involves five stages parallel to those of a primary research study. These stages of a meta-analysis are: problem formulation, data collection, data evaluation, analysis and interpretation, public presentation. *The Handbook of Research Synthesis* by the editors Harris Cooper and Larry V. Hedges (1994) draws from the experience of 43 major proponents of meta-analysis to discuss in detail the issues and methodological choices, associated with each of these stages, in the context of a meta-analytic integrative review. Through the MIRS approach, I have attempted to extend this discussion by identifying the phases in the context of a research synthesis framework that is more inclusive of diverse methodologies.

I began by unpacking each stage of a meta-analysis in the light of the insights gained through my interactions with colleagues and published literature on a wide range of methods of

primary research and research synthesis. This involved unravelling the associated euphemisms and problematising embedded assumptions with the purpose of making it more transparent and methodologically inclusive. As meta-analytic stages were conceptualised in the context of quantitative research, I drew heavily from qualitative and mixed primary research methods texts to adapt Cooper's stages of research synthesis for a methodologically inclusive context. After brainstorming a wide range of questions relevant to the processes of a wide range of research syntheses, I grouped these questions into six broad clusters of tasks. These clusters were refined further into the following six phases of a research synthesis: framing the purpose and orientation; selecting the evidence; distilling the information; constructing connected understanding(s); sharing with an audience; and evaluating a research synthesis.

- *Framing the purpose and orientation.* A research synthesis may serve one or more diverse purpose to voice and/or challenge the concerns of different stakeholder in the production and use of educational research. These purposes may be pursued from a variety of theoretical and methodological orientations.
- *Selecting the Evidence.* Primary research reports form the evidence of a research synthesis. The selection criteria and the search strategies employed in the synthesis may be chosen in alignment with its purpose and orientation.
- *Distilling the Information.* A variety of techniques and criteria may be employed to extract, interpret and evaluate the relevant information from individual studies.
- *Constructing Connected Understandings.* The relevant information extracted from individual studies may be connected through various lenses and strategies to construct understandings of different aspects of the phenomenon.
- *Sharing with an audience.* The overall structure, tools and techniques of the synthesis report may be selected to match the intended audience and the impact that the synthesist wishes to make through the synthesis.
- *Evaluating a research synthesis.* The general criteria that may be employed to evaluate every research synthesis include: coherence between the purpose and the process; reflexivity between the process and the product; and transparency at every critical decision point of the process. The specific techniques for achieving these general criteria may be chosen in the light of the different aspects of the synthesis design.

In practice, these phases are likely to overlap with tasks involved in more than one phase being carried out simultaneously. Considerations within each phase may inform and refine the process of other phases. The sequential nature of these phases is preferably conceptualised as a spiral, rather than a linear, process where each phase tends to be revisited and refined several times. The verbs associated with each phase are presented in present continuous tense to emphasise the ongoing nature of each phase and refrain from implying a sense of finality. Within each phase, a sense of objective distancing is avoided by emphasising the role of the synthesist as a sensitive human instrument.

Explicit Reflexivity Between the Process and the Product

The product of any research synthesis is influenced by the critical decisions made by the synthesist in the process of the synthesis. In practice, the choices made during the process of a research synthesis are guided by the nature of the intended purpose of the synthesis product. In a rigorous synthesis, the synthesist iteratively reflects upon the intended purpose of the product and maps the process accordingly. Also, the synthesist reflects upon how the critical

 ©Harsh Suri, 2002

decisions made in the process may shape the final product of the research synthesis. Synthesists may deliberately make certain methodological choices to pursue one purpose that would be made differently for another purpose. Likewise, certain methodological decisions will provide particular insights into a phenomenon that may be different from those found through alternative methodological decisions. Through the MIRS approach, I have attempted to support such reflexivity between the process and the product of a research synthesis. Such methodological awareness promotes critical thinking in the production and use of research syntheses.

Such an explicit reflexivity between the synthesis process and the synthesis product is evident throughout the synthesis by Wideen, Mayer-Smith and Moon (1998) as illustrated through the following excerpt.

> We begin this review with a brief discussion of the perspectives we brought to the review and how they influenced the framing of the review and the review process (p. 131).

Transparency to Improve Transferability

Through the MIRS approach, I have emphasised the need for a transparency of the process within research synthesis reports to enhance the transferability of the product. Increased transparency of the process would require the research synthesist to delineate and substantiate the critical choices made while conducting a synthesis. Also, research synthesists would share their reflections on the possible consequences that their decisions may have had in shaping the synthesis products. Transparency of process would allow readers to evaluate critically the level(s) of (dis)similarities of the synthesis context or standpoint with their own contexts or viewpoints. This, in turn, can improve informed transferability of the product: the readers can adapt the synthesis product in varying degrees to their own contexts.

Wideen, Mayer-Smith and Moon (1998) also recognise the need for a transparency in the process of a synthesis.

> We recognize that, as a research team, we bring our own biases to this review, which may surface in the pages that follow. We can claim only that we have attempted to reduce the influence of our biases by making our perspectives known to each other and to the readers of this review, where possible (p. 132).

Conclusion

Contemporary educational research is marked by diversity, complexity and richness of purposes, methods and perspectives. The MIRS framework is conceptualised on the premise that such variety and complexity should also be celebrated at the level of synthesising research. The MIRS framework offers a set of guidelines to facilitate informed choices at the critical decision points of any research synthesis process. This paper describes the essential features of the MIRS framework by drawing on illustrations from an exemplary synthesis.

 ©Harsh Suri, 2002

References

Cooper, H. M. (1982). Scientific guidelines for conducting integrative research reviews. *Review of Educational Research, 52*(2), 291-302.

Cooper, H. M. (1998). *Synthesizing research: a guide for literature reviews* (3rd ed. ed.). Thousand Oaks, CA : Sage Publications.

Eastabrooks, C. A., Field, P. A., & Morse, J. M. (1994). Aggregating qualitative findings: An approach to theory development. *Qualitative Health Research, 4*(4), 503-511.

Eisenhart, M. (1998). On the subject of interpretive reviews. *Review of Educational Research, 68*(4), 391-399.

Glass, G. V. (1976). Primary, secondary, and meta-analysis of research. *Educational Researcher, 5*(10), 3-8.

Glass, G. V., McGaw, B., & Smith, M. L. (1981). *Meta-analysis in social research.* Beverly Hills: Sage.

Jensen, L. A., & Allen, M. N. (1994). A synthesis of qualitative research on wellness-illness. *Qualitative Health Research, 4*(4), 349-369.

Miles, M. B., & Huberman., A. M. (1994). *Qualitative data analysis: an expanded sourcebook* (2nd ed. ed.). Thousand Oaks: Sage.

Noblit, G. W., & Hare, R. D. (1988). *Meta-ethnography: synthesizing qualitative studies.* Newbury Park: Sage Publication.

Ogawa, R. T., & Malen, B. (1991). Towards rigor in reviews of multivocal literatures: Applying the exploratory case study method. *Review of Educational Research, 61*(3), 265-286.

Paterson, B. L., Thorne, S. E., Canam, C., & Jillings, C. (2001). *Meta-study of qualitative health research : a practical guide to meta-analysis and meta-synthesis.* Thousand Oaks, CA:: Sage.

Sandelowski, M., Docherty, S., & Emden, C. (1997). Focus on qualitative methods. Qualitative metasynthesis: issues and techniques. *Research in Nursing and Health, 20*(4), 365-371.

Slavin, R. E. (1986). Best-evidence synthesis: An alternative to meta-analytic and traditional reviews. *Educational Researcher, 15*(9), 15-11.

Wideen, M. F., Mayer-Smith, & J.A., M., B.J. (1998). A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry. *Review of Educational Research, 68*(2), 130-178.

©Harsh Suri, 2002